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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,205	11/20/2003	Stefan Felter	2380-796	6217

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NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

NGUYEN, MY XUAN

ART UNIT	PAPER NUMBER
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2617

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/717,205	FELTER, STEFAN	
	Examiner	Art Unit	
	My X. Nguyen	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 12-21, & 27-30 is/are rejected.
- 7) ☒ Claim(s) 7-11 & 22-26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The submission of the information disclosure statement on 11/20/2003 and 06/21/2005 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner (see attached PTO-1449).

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited.

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5 and 16-20 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Application 2003/0012267 A1 (Jitsukawa et al.).

Regarding claim 1, Jitsukawa et al. discloses a wireless communication receiver comprising: an antenna array comprising an antenna which provides signals for each of successive sets of pilot data (Figs. 1-3, ¶ 6, 30, & 38); a joint searcher (¶ 47, searcher) and channel estimator (¶ 37-46, phase difference estimation portion) which essentially concurrently considers the plural signals for the respective successive sets of pilot data for determining both a time of arrival and channel coefficient (Figs. 2 & 4, ¶ 32-71).

Regarding claims 2 and 17, Jitsukawa et al. discloses the time of arrival and the channel coefficient are essentially concurrently determined by the joint searcher and channel estimator (¶ 37-46).

Regarding claims 3 and 18, Jitsukawa et al. discloses the apparatus and method of claims 1 and 16, further comprising a detector which utilizes the channel coefficient and the time of arrival to provide a symbol estimate (§§ 6-14).

Regarding claims 4 and 19, Jitsukawa et al. discloses the apparatus of claims 1 and 16, wherein the wireless communication receiver is a mobile terminal (§§ 16).

Regarding claims 5 and 20, Jitsukawa et al. discloses the apparatus of claims 1 and 16, wherein the wireless communication receiver is a network node (§§ 1 & 30, base station).

Regarding claim 16, Jitsukawa et al. discloses a method of operating a wireless communication receiver comprising: obtaining from an antenna element signals for each of successive sets of pilot data (Figs. 1-3, §§ 6, 30, & 38); concurrently using the signals for each of successive sets of pilot data for determining both a time of arrival and channel coefficient (Figs. 2 & 4, §§ 32-71).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 6, 12-15, 21, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jitsukawa et al. as applied to claims 1-5 and 16-20 above, and further in view of U.S. Patent 5,790,606 (Dent et al.).

Regarding claims 6 and 12, Jitsukawa et al. has been discussed above.

However, Jitsukawa et al. fails to disclose an antenna signal matrix in which a complex value indicative of the signal received in a sampling window is stored as a function of a sampling window time index and the pilot set index; a correlator which uses the antenna signal matrix to generate a correlator output; a correlator output analyzer which uses the correlator output to generate the time of arrival and the channel coefficient.

Dent et al. discloses an antenna signal matrix in which values indicative of the signal received in a sampling window is stored (Figs. 1 & 7, Col. 4 Line 1 - Col. 6 Line 17).

Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify the invention of Jitsukawa et al., and have an

antenna signal matrix in which complex values indicative of the signal received in a sampling window is stored as a function of a sampling window time index and the pilot set index; a correlator which uses the antenna signal matrix to generate a correlator output; a correlator output analyzer which uses the correlator output to generate the time of arrival and the channel coefficient. The motivation to make the combination is for the purpose of determining and generating the time of arrival and the channel coefficient.

Regarding claims 13-15, 21, and 27-30, the combination of Jitsukawa et al. and Dent et al. discloses the apparatus of claim 12, wherein each frequency parameter in the parameter estimation vector corresponds to a possible doppler shift;

wherein the parametric output estimation vector has a sampling window time index and wherein the analyzer uses absolute values of elements of the parametric output estimation vector to determine the time of arrival and doppler shift of an arriving wavefront;

and wherein the parametric output estimation vector has a sampling window time index and a direction index; and wherein for an element of the parametric output estimation vector having a sufficiently high absolute value the analyzer uses the sampling window time index for an element of the parametric output estimation vector having a sufficiently high absolute value to determine the time of arrival of the arriving wavefront (Figs. 3 & 8, ¶¶ 33-40).

Allowable Subject Matter

6. Claims 7-11 and 22-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-30 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4, 8-13, 17-20, 24-27, 29, 33-36, 39, 41-43, and 47-49 of copending Application No. 10/717,313.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of Applicant recite similar limitations to that of Application No. 10/717,313.

Claim 1 of the current Application (10/717,205) recites similar limitations to claim 1 of copending Application No. 10/717,313.

Claim 2 of the current Application (10/717,205) recites similar limitations to claim 4 of copending Application No. 10/717,313.

Claims 3-8 of the current Application (10/717,205) recites similar limitations to claims 8-13, respectively, of copending Application No. 10/717,313.

Claims 9-12 of the current Application (10/717,205) recites similar limitations to claims 17-20, respectively, of copending Application No. 10/717,313.

Claims 13-16 of the current Application (10/717,205) recites similar limitations to claims 24-27, respectively, of copending Application No. 10/717,313.

Claim 17 of the current Application (10/717,205) recites similar limitations to claim 29 of copending Application No. 10/717,313.

Claim 18 of the current Application (10/717,205) recites similar limitations to claim 33 of copending Application No. 10/717,313.

Claims 19 and 20 of the current Application (10/717,205) recite similar limitations to claims 4 and 5, respectively, of copending Application No. 10/717,313.

Claims 21-23 of the current Application (10/717,205) recites similar limitations to claims 34-36, respectively, of copending Application No. 10/717,313.

Claim 24 of the current Application (10/717,205) recites similar limitations to claim 39 of copending Application No. 10/717,313.

Claims 25-27 of the current Application (10/717,205) recites similar limitations to claims 41-43, respectively, of copending Application No. 10/717,313.

Claims 28-30 of the current Application (10/717,205) recites similar limitations to claims 47-49, respectively, of copending Application No. 10/717,313.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My X. Nguyen whose telephone number is (571) 272-2835. The examiner can normally be reached on Monday through Friday at 8:00AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

M.X.N.
06/21/2006


DUC NGUYEN
PRIMARY EXAMINER